

# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB2005/000027

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B41F9/06 B41F31/20 B41F9/10 B41F31/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B41F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages              | Relevant to claim No. |
|------------|---|-----------------------|
| Y          | US 4 428 291 A (DOROW ET AL)<br>31 January 1984 (1984-01-31)<br>column 5, lines 53-55; figure 1 | 1                     |
| Y          | US 4 604 951 A (ICHIKAWA ET AL)<br>12 August 1986 (1986-08-12)<br>column 4; figures 3,4         | 1                     |
| Y          | EP 0 182 325 A (ALBERT-FRANKENTHAL AG)<br>28 May 1986 (1986-05-28)<br>abstract; figure 1        | 1                     |
| Y          | FR 1 259 111 A (GUALTIERO GIORI)<br>21 April 1961 (1961-04-21)<br>the whole document            | 1                     |
|            | -/--  |                       |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

18 April 2005

Date of mailing of the international search report

28/04/2005

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages                           | Relevant to claim No. |
|------------|--|-----------------------|
| A          | US 6 427 591 B1 (SCHMID GOTTHARD)<br>6 August 2002 (2002-08-06)<br>column 2, lines 56-63; figure 1a<br>----- | 4,5                   |
| A          | US 5 372 644 A (KOCHSMEIER ET AL)<br>13 December 1994 (1994-12-13)<br>abstract; figure 1<br>-----            | 6-13                  |
| A          | US 4 516 496 A (GIORI ET AL)<br>14 May 1985 (1985-05-14)<br>the whole document<br>-----                      | 1-20                  |
| A          | EP 0 982 131 A (KOMORI CORPORATION)<br>1 March 2000 (2000-03-01)<br>the whole document<br>-----              | 1-20                  |
| A          | EP 1 088 657 A (KOMORI CORPORATION)<br>4 April 2001 (2001-04-04)<br>paragraph '0021!<br>-----                | 1,14,15               |
| A          | GB 987 102 A (GUALTIERO GIORI)<br>24 March 1965 (1965-03-24)<br>figure 1<br>-----                            | 1,14,15               |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2005/000027

| Patent document<br>cited in search report |    | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|----|---------------------|----------------------------|---------------------|
| US 4428291                                | A  | 31-01-1984          | DE 3117341 A1              | 18-11-1982          |
|   |    |                     | DE 3261597 D1              | 31-01-1985          |
|   |    |                     | EP 0064270 A1              | 10-11-1982          |
|   |    |                     | JP 1657662 C               | 21-04-1992          |
|   |    |                     | JP 3026127 B               | 09-04-1991          |
|   |    |                     | JP 57187254 A              | 17-11-1982          |
| US 4604951                                | A  | 12-08-1986          | JP 4027944 B               | 13-05-1992          |
|   |    |                     | JP 61061856 A              | 29-03-1986          |
|   |    |                     | AT 36272 T                 | 15-08-1988          |
|   |    |                     | CA 1234507 A1              | 29-03-1988          |
|   |    |                     | DE 3564218 D1              | 15-09-1988          |
|   |    |                     | EP 0176702 A1              | 09-04-1986          |
|   |    |                     | IN 161730 A1               | 23-01-1988          |
|   |    |                     | KR 8903851 B1              | 05-10-1989          |
|   |    |                     | LT 2633 R3                 | 25-04-1994          |
|   |    |                     | LV 5665 A3                 | 20-10-1994          |
|   |    |                     | SU 1452472 A3              | 15-01-1989          |
| EP 0182325                                | A  | 28-05-1986          | DE 3442661 A1              | 05-06-1986          |
|   |    |                     | EP 0182325 A2              | 28-05-1986          |
| FR 1259111                                | A  | 21-04-1961          | NONE                       |                     |
| US 6427591                                | B1 | 06-08-2002          | DE 19859437 A1             | 29-06-2000          |
|   |    |                     | DE 59907008 D1             | 23-10-2003          |
|   |    |                     | EP 1013418 A1              | 28-06-2000          |
|   |    |                     | IL 133620 A                | 24-06-2003          |
|   |    |                     | JP 2000185391 A            | 04-07-2000          |
| US 5372644                                | A  | 13-12-1994          | DE 4140790 A1              | 15-07-1993          |
|   |    |                     | DE 4210529 A1              | 07-10-1993          |
|   |    |                     | CA 2084814 A1              | 12-06-1993          |
|   |    |                     | DE 9218955 U1              | 22-08-1996          |
|   |    |                     | DE 59207809 D1             | 13-02-1997          |
|   |    |                     | EP 0546454 A1              | 16-06-1993          |
|   |    |                     | JP 6255087 A               | 13-09-1994          |
| US 4516496                                | A  | 14-05-1985          | AT 19997 T                 | 15-06-1986          |
|   |    |                     | AU 550695 B2               | 27-03-1986          |
|   |    |                     | AU 1254983 A               | 13-10-1983          |
|   |    |                     | CA 1200147 A1              | 04-02-1986          |
|   |    |                     | DD 209596 A5               | 16-05-1984          |
|   |    |                     | DE 3363712 D1              | 03-07-1986          |
|   |    |                     | EP 0091709 A1              | 19-10-1983          |
|   |    |                     | JP 1621024 C               | 09-10-1991          |
|   |    |                     | JP 2042070 B               | 20-09-1990          |
|   |    |                     | JP 58183257 A              | 26-10-1983          |
|   |    |                     | SU 1194263 A3              | 23-11-1985          |
| EP 0982131                                | A  | 01-03-2000          | JP 2000127351 A            | 09-05-2000          |
|   |    |                     | AT 242123 T                | 15-06-2003          |
|   |    |                     | DE 69908514 D1             | 10-07-2003          |
|   |    |                     | DE 69908514 T2             | 29-04-2004          |
|   |    |                     | EP 0982131 A2              | 01-03-2000          |
|   |    |                     | ES 2204063 T3              | 16-04-2004          |
|   |    |                     | US 6202554 B1              | 20-03-2001          |

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Information on patent family members

International Application No

PCT/IB2005/000027

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s)       | Publication<br>date      |
|---|---|---------------------|----------------------------------|--------------------------|
| EP 1088657                                | A | 04-04-2001          | JP 2001096722 A<br>EP 1088657 A1 | 10-04-2001<br>04-04-2001 |
| GB 987102                                 | A | 24-03-1965          | NONE                             |                          |